

PATENT COOPERATION TREATY

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From the  
INTERNATIONAL PRELIMINARY EXAMINING

PCT

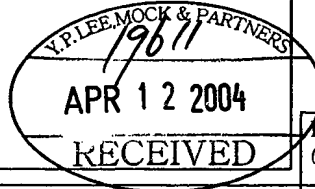
NOTIFICATION OF TRANSMITTAL OF  
INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 71.1)

To:

LEE, Young-Pil

The Cheonghwa Building, 1571-18, Seocho-dong, Seocho-gu,  
137-874 Seoul, Republic of Korea



Date of mailing  
(day/month/year) 06 APRIL 2004 (06.04.2004)

Applicant's or agent's file reference  
GR-18806-PCT

IMPORTANT NOTIFICATION

International application No.

PCT/KR2003/000208

International filing date (day/month/year)

29 JANUARY 2003 (29.01.2003)

Priority date (day/months/year)

29 JANUARY 2002 (29.01.2002)

Applicant

GRACEL CO., LTD. et al

1. The applicant is hereby notified that International Preliminary Examining Authority transmits here with the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**  
The applicant must enter the national phase before each elected office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details in the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/KR



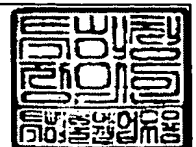
Korean Intellectual Property Office  
920, Dunsan-dong, Seo-gu, Daejeon 302-701,  
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

COMMISSIONER

Telephone No. 82-42-481-5762



## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference GR-18806-PCT	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. <b>PCT/KR2003/000208</b>	International filing date (day/month/year) 29 JANUARY 2003 (29.01.2003)	Priority date (day/month/year) 29 JANUARY 2002 (29.01.2002)
International Patent Classification (IPC) or national classification and IPC <b>IPC7 G09G 3/30</b>		
Applicant GRACEL CO., LTD. et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☒ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  07 MARCH 2003 (07.03.2003)	Date of completion of this report  31 MARCH 2004 (31.03.2004)
Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer  CHUN, Dae Sik  Telephone No. 82-42-481-5871 

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

- ☒ the international application as originally filed
- ☐ the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the claims:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement) under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the drawings:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language English which is

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☒ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheet \_\_\_\_\_

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed." and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	3, 4, 6-10, 13, 14, 16-19	YES
	Claims	1, 2, 5, 11, 12, 15	NO
Inventive step (IS)	Claims	8-10, 18, 19	YES
	Claims	1-7, 11-17	NO
Industrial applicability (IA)	Claims	1-19	YES
	Claims	None	NO

**2. Citations and explanations (Rule 70.7)**

D : JP2001-350431(2001.12.21)

**1. Novelty**

The provided pixel of Claims 1 and 2 comprises of a diode, a capacitor, and a light-emitting device. Here the light-emitting device is an EL element or a LED (which has a diode-like character). In this pixel structure, there is no transistor usually used for selecting a pixel. The pixel structure and the operations of each components explained in claims 1 and 2 are the same as those found in Fig.1 of D.

Claim 5 is the same as Claim 2 except the reversed polarity, and this is the same as found in Fig.5 of D.

Claims 11, 12, and 15 don't have any other technical concept and they are similar to Claims 1, 2, and 5 respectively.

So, Claims 1, 2, 5, 11, 12, 15 cannot be regarded as meeting the requirement of novelty (Art.33(2) PCT).

**2. Inventive Step**

Claims 1-4 refer to a pixel structure and its driving method, in which the light-emitting element has the characteristics of a diode. The driving methods of the claimed invention are very similar to those found in D as explained below.

In addressing period, the diode is on, and the light-emitting device is off, meanwhile the capacitor is charged by the data signal.

In light-emitting period, the diode is off, and the light-emitting device is on, meanwhile the stored charge flows through the light-emitting device.

These operations rely on the characteristics of the light-emitting device, a diode-like character, and on the characteristics of a capacitor, a resistance to abrupt voltage change.

The same principles and driving pulses are used in D, for instance, in Fig.1 and Fig.2.

Claims 5-7 are the same as claims 2-4 except the reversed polarity, and these are the same as found in Fig.5 and Fig.6 of D.

Claims 11-17 are related to Claims 1-7 respectively, without any other technical concept.

Therefore, Claims 1-7 and 11-17 cannot be regarded as meeting the requirement of inventive step (Art.33(3) PCT).

**3. Industrial Applicability**

The whole Claims are concerning the matrix-type display using EL or LED. So, this application can be regarded as meeting the requirement of industrial applicability (Art 33(4) PCT).

# INTERNATIONAL PRELIMINARY EXAMINATION

International application No.

PCT/KR2003/000208

## VI. Certain documents cited

### 1. Certain published documents (Rule 70.10)

<u>Application No. Patent No.</u>	<u>Publication date (day/month/year)</u>	<u>Filing date (day/month/year)</u>	<u>Priority date (valid claim) (day/month/year)</u>
JP2001-350431	2001.12.21	2000.06.07	
US 2001/54711	2001.12.27		
JP2002-108284	2002.04.10	2000.09.28	
US 2002/36605	2002.03.28		
TW 511067	2002.11.21		
JP1998-268798	1998.10.09	1997.03.27	
US 6,307,324	2001.10.23		

### 2. Non-written disclosures (Rule 70.9)

<u>Kind of non-written disclosure</u>	<u>Date of non-written disclosure (day/month/year)</u>	<u>Date of written disclosure referring to non-written disclosure (day/month/year)</u>